

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Office Action dated January 12, 2006, has been received and its contents carefully reviewed. Applicants appreciate the indication by the Examiner that claim 21 recites allowable subject matter.

Claims 1-20 and 22-42 are rejected and claim 21 is objected to by the Examiner. With this response, claims 1, 8, 11, 12, 15, 19, and 23 have been amended, and claim 10 has been canceled without prejudice or disclaimer. New claim 43 has been added. No new matter has been added. Claims 1-9 and 11-43 remain pending in this application.

In the Office Action, claims 1-13, 15, 16, 18-20, 22-24 and 29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicants' Related Art (ARA) in view of U.S. Publication No. 2005/0018108 (hereinafter '108'). Claims 14, 17, 25-28 and 30-42 are rejected under 35 U.S.C. § 103(a) as being unpatentable over ARA in view of '108' and further in view of U.S. Patent No. 5,777,707 (hereinafter '707'), U.S. Patent No. 5,757,452 (hereinafter '452'), U.S. Patent No. 5,642,176 (hereinafter '176'), U.S. Patent No. 5,142,392 (hereinafter '392') and U.S. Patent No. 6,707,067 (hereinafter '067').

The rejection of claims 1-13, 15, 16, 18-20, 22-24 and 29 under 35 U.S.C. § 103(a) as being unpatentable over Applicants' Related Art in view of U.S. Publication No. 2005/0018108 (hereinafter '108') is respectfully traversed and reconsideration is requested.

Claim 10 has been cancelled without disclaimer or prejudice and Applicants submit that the rejection to claim 10 is moot. Claim 11 has been written in independent form, reciting the limitations of the base claim.

Applicants submit that claims 1 and 11 are allowable over ARA and '108' because the references do not teach each and every element of the claims.

Claim 1 recites an in-plane switching liquid crystal display device having a combination of features including "wherein the R, G, B, and W pixels are arranged in a zigzag pattern in a data line direction, and each of R, G, B, and W pixels is arranged to be symmetric with respect to the gate line to adjacent R, G, B, and W pixels" and "wherein each W pixel is not adjacent to another W pixel."

Applicants note that in rejecting claim 14, the Examiner states in the Office Action "ARA in view of 108 teaches the in-plane switching mode liquid crystal display device 13, but lacks the

white pixel of the first set and the white pixel of the second set are not adjacent to each other.” Applicants agree with the Examiner’s characterization of ARA and ‘108’. Accordingly, Applicants respectfully submit that the claim 1 is allowable over ARA and ‘108’.

Claim 11 recites an in-plane switching liquid crystal display device having a combination of features including “wherein the first set of pixels and the second set of pixels are adjacent to each other and wherein the white pixel of the first set and the white pixel of the second set are not adjacent to each other.” Applicants respectfully submit that ARA and ‘108’ fail to teach the recited features of claim 11 for reasons identical to those given for claim 1. Accordingly, Applicants respectfully submit that the claim 11 is allowable over ARA and ‘108’.

Applicants further submit that claims 1, 8, and 11 are allowable over ARA and ‘108’ because no motivation has been provided to combine ‘ARA’ and ‘108’ to produce the combination of elements recited in the claims.

Claim 1 recites an in-plane switching mode liquid crystal display device “wherein the R, G, B, and W pixels are arranged in a zigzag pattern in a data line direction, and each of R, G, B, and W pixels is arranged to be symmetric with respect to the gate line to adjacent R, G, B, and W pixels.” In rejecting claim 1, the Examiner indicates, “it was well known or conventional to use dedicated white pixels...to produce white without the need for complex driving multiple subpixels.” Applicants respectfully disagree that the teaching indicated by the Examiner would motivate one skilled in the art to add a white subpixel to a color display with R, G, B subpixels because the complex driving circuitry for driving the subpixels would necessarily be present and adding circuitry for driving the dedicated ‘W’ pixel would add rather than reduce driver complexity. Accordingly, Applicants submit that no motivation outside of the Applicants specification has been provided to combine the ARA and ‘108’ to produce the combined features recited in claim 1.

Claim 8 recites an in-plane switching mode liquid crystal display device including “a plurality of pixels defined by a plurality of gate lines and a plurality of data lines, each pixel including R (Red), G (Green), B (Blue), and W (White) subpixels.” In rejecting claim 8, the Examiner indicates that ARA and ‘108’ teach this element for the same reasons given for claim 1. Applicants’ argument with respect to claim 1 is equally applicable to claim 8. Accordingly, Applicants submit that no motivation outside of the Applicants specification has been provided to combine the ARA and ‘108’ to produce the combined features recited in claim 8.

Claim 11 recites an in-plane switching mode liquid crystal display device including “a plurality of pixels defined by a plurality of gate lines and a plurality of data lines, each pixel including R (Red), G (Green), B (Blue), and W (White) subpixels.” In rejecting claim 8, the Examiner indicates that ARA and ‘108’ teach this element for the same reasons given for claim 1. Applicants’ argument with respect to claim 1 is equally applicable to claim 11. Accordingly, Applicants submit that no motivation outside of the Applicants specification has been provided to combine the ARA and ‘108’ to produce the combined features recited in claim 11.

Accordingly, Applicants submit that claims 1, 8 and 11 are allowable over Applicants’ Related Art and ‘108’, for at least the reasons given above, and that claims 2-7, 9, 12, 13, 15, 16, 18-20, and 22-24 which are also allowable over the cited references based on their dependencies from claims 1, 8, and 11.

Applicants further note that while the Examiner alleges in the Office Action that claims 18-20, 22, and 23 are unpatentable over Applicants’ Related Art and ‘108’, the Office Action does not provide an application of the references to these claims. Claims 20 and 22 for example each recite the limitation “wherein the bent portion of the data lines of the first set and the bent portion of the data lines of the second set are the same direction”, a limitation that is not recited in claims 1-13, 15, 16, 24 and 29. Accordingly, Applicants submit that Examiner has not presented a prima facie case that claims 18-20, 22, and 23 are unpatentable over Applicants’ Related Art and ‘108’.

Claim 29 as recites an in-plane switching mode liquid crystal display device having a combination of features including “wherein the first set of pixels and the second set of pixels are adjacent to each other and the third set of pixels and the fourth set of pixels are adjacent to each other and wherein the white pixels are not adjacent to each other, and wherein the white pixels of each of the first to fourth sets of pixel are not in a line”. In rejecting claim 29, the Examiner cites Applicants’ Related Art and ‘108’ as teaching “a second set of pixels of different colors wherein one of the pixels is a white (W) pixel [top R and W, but must use every other R as R is shared with B].” The Examiner in his Office Action indicates, “there is a G pixel in between but they are still adjacent”. It is unclear which pixels the Examiner refers to, but Applicants respectfully disagree that pixels separated by a G pixel are still adjacent. Applicants submit that the identified set of pixels is not as recited in claim 29 and that Applicants’ Related Art and ‘108’, taken singly or in combination, fail to teach or suggest the elements of claim 29. Accordingly,

Applicants submit that claim 29 is allowable over the cited references and request that the rejection of claim 29 be withdrawn.

The rejection of claims 14, 17, 25-28 and 30-42 under 35 U.S.C. § 103(a) as being unpatentable over ARA in view of '108' and further in view of U.S. Patent No. 5,777,707 (hereinafter '707'), U.S. Patent No. 5,757,452 (hereinafter '452'), U.S. Patent No. 5,642,176 (hereinafter '176'), U.S. Patent No. 5,142,392 (hereinafter '392') and U.S. Patent No. 6,707,067 (hereinafter '067') is respectfully traversed and reconsideration is requested. Applicants submit that the claims are allowable over the cited references, because the references do not teach or suggest every aspect of the claims, and no motivation exists to combine the teachings of the references to make the combination recited in the claims.

With respect to claims 14, 17, and 25-28, these claims depend from claim 11 and accordingly recite all of the limitations of claim 11. Claim 11 recites an in-plane switching mode liquid crystal display device, "wherein the white pixel of the first set and the white pixel of the second set are not adjacent to each other." The Examiner in rejecting claims 14 and 17 states and Applicants agree that "[Applicants' Related Art] in view of '108' ... lacks the white pixel of the first set and the white pixel of the second set not adjacent to each other." To cure this deficiency, the Examiner cites the '707', '452', '176', '392', and '067' patents as teaching the cited feature of claim 11, and as motivation for modifying the teachings of Applicants' Related Art and '108' states "it would have been obvious to one of ordinary skill at the time of the invention to combine ARA in view of 108 with common knowledge in order to improve the color gamut of the cell. Applicants submit that the cited references do not teach or suggest modifying Applicants' Related Art and '108' to produce the combination recited in claim 11, and respectfully request that the Examiner identify the teaching in the references or withdraw the rejection. However, assuming for the purpose of argument that the cited references do teach the arrangement in claim 11, Applicants disagree with the Examiners contention that it is well known to improvement the color gamut by having non adjacent white pixels and request that the Examiner provide evidentiary support for his contention. Accordingly, Applicants submit that the Examiner has failed to establish a prima facie case that 14, 17, and 25-28 depending from claim 11 are unpatentable over the cited references, and request that the rejection be withdrawn.

As discussed above Applicants' Related Art and '108' do not teach or suggest every element of claim 29. Applicants submit that none of the cited references, taken singly or in

combination cures the deficiencies in Applicants' Related Art and '108' with respect to claim 29. Accordingly, Applicants submit that claims 30-42 are allowable over the cited references at least because of their dependencies from claim 29.

In the Office Action, claim 21 is identified as allowable but is objected to as depending from a rejected base claim. Applicants submit that claim 21, as presented on page 5 of Applicants' November 2, 2005 amendment is in independent format referring to no other claim. Accordingly, Applicants submit that claim 21 is allowable and respectfully request that the objection to claim 21 be withdrawn.

Applicants believe the foregoing amendments place the application in condition for allowance and early, favorable action is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. § 1.136, and any additional fees required under 37 C.F.R. § 1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. *A duplicate copy of this sheet is enclosed.*

Respectfully submitted,

Dated: April 11, 2006

By 

Rebecca G. Rudich
Registration No. 41,786

McKENNA LONG & ALDRIDGE LLP
1900 K Street, N.W.
Washington, DC 20006
(202) 496-7500
Attorneys for Applicants